



# Developing Capability and Agency through a Poverty-reduction Approach to Community Education and Sustainability in Botswana

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## Abstract

*Women in the Tswapong Region of Botswana depend on natural resources for their livelihood. These resources are seasonal and are often affected by unreliable rainfall patterns. Botswana government policies create sustainable, natural resource management opportunities. This article is based on research investigating how women in rural communities, and in the specific context of the Kgetsi-ya-Tsie (a community trust), who are dependent on arable agriculture and on natural resources are making an effort to reduce poverty. The research also sought to understand what constitutes quality and relevant education for the promotion of sustainable development in such a context. The research examined how women in the eastern part of Botswana exploit natural resources for subsistence and commercial reasons. It also examined the different skills employed by women to cope with economic and social challenges and to promote sustainability. Furthermore, the research explored the women's/communities' conceptions of quality and relevant adult education, capabilities, agency, and adult-education pedagogies in order to promote social change relating to poverty-reduction strategies among rural women. Data for this article was generated through a questionnaire, a research schedule, focus-group discussions, document analyses, interviews and observation. The results of this research show that the benefits of promoting social change relating to poverty-reduction strategies are increasing annually, although some challenges are reducing the enthusiasm of some members of Kgetsi-ya-Tsie. During the research, it emerged that the knowledge that is shared and learnt in communities of practice is social capital. Women connect at various levels, without the constraints of a formal structure, in order to acquire skills that enable them to be more resilient to environmental and economic challenges. They share their expertise and experiences, and they learn from one another through different ways of solving the problems they face, developing new capabilities, leveraging best practices, standardising practices, and increasing their talents. Poverty reduction requires multifaceted approaches by those affected and by government institutions offering opportunities for assistance. However, what has not emerged clearly from this ongoing research is how power is distributed among women in relation to strategies for coping with poverty and organisational practices.*

## Introduction

Discourses on gender issues and natural resource utilisation for sustainable development are topical issues that cannot be avoided. For instance, it is stated that, wherever poverty occurs, statistics indicate that women are more likely than men to be poor (UN, 2013:1). Consequently, the Botswana government has introduced several policies and projects to empower women to participate in economic activities that could reduce, if not eliminate, poverty among women,

particularly poor, women-headed households. Women, especially poor women, are often blamed for degrading the environment in trying to make a living from the available natural resources. Recognising this, the government of Botswana has initiated the formation of community-based organisations (CBOs) through the Community Based Natural Resources Management Policy (CBNRMP) (Republic of Botswana, 2007). The CBNRMP promotes sustainable utilisation of natural resources. The Policy encourages local communities to participate in natural resource management. In response to this Policy, women from 26 villages in the Tswapong area have formed a community-based trust to sustainably manage natural resources within their area. The Trust, known as *Kgetsi-ya-Tsie*, is a women's CBO involved in the management of natural resources. The name '*Kgetsi-ya-Tsie*' is derived from a Setswana proverb, which reads: *Kgetsi ya tsie e kgonwa ke go tshwaraganelwa*. Translated, this means: 'If we are united we can succeed.' The purpose of the Trust is to assist rural women to empower themselves, both socially and economically, by more effectively organising their entrepreneurial activities through the sustainable management of natural resources (KyT, 2009). The present study thus elucidates the role of women, as well as their participation and self-empowerment through social learning, in reducing poverty among themselves and promoting sustainable development.

### *Contextual Background*

The research discussed in the present article forms part of a research programme on education for sustainable development (ESD) and on education quality and relevance initiated and supported by the Southern African Development Community Regional Environmental Education Programme (SADC-REEP). The research programme involved ten universities/higher-education institutions across SADC countries. The aim of the research programme was to investigate the relationship between ESD and education quality and relevance. Its broad research question was: How can SADC education systems respond to contexts of risk and vulnerability, and mobilise opportunities for agency and social change? Underpinning the research programme was Education for All Goal 2 in respect of education quality (UNESCO, 2000) and Millennium Development Goal 7 (UN, 2005) in respect of ecological sustainability. SADC-REEP supported the research programme through seed funds and encouraged institutions to sustain the research initiatives within the constraints of their own financial and budgetary limits. The research programme also addresses the environmental and human-resource goals of the SADC Regional Indicative Strategic Development Plan (SADC, 2003), and aims to inform efforts at mainstreaming environmental and sustainability issues into education systems during the UN Decade of Education for Sustainable Development and beyond. Higher-education institutions were at liberty to choose their focus within the broad aim of the research programme, and the University of Botswana chose to research 'Developing Capability and Agency through a Poverty-reduction Approach to Sustainability in Botswana'.

#### **The context of Botswana**

Over 70% of Botswana's population lives in the rural areas. The majority of these people are women who are predominantly subsistence farmers. They derive their livelihood from

subsistence agriculture and other rural activities, but these livelihood sources, as is the case in most parts of the developing world, are never adequate and are threatened by high demand and by climate change and variation. The agricultural sector's reliance on seasonal, rain-fed cultivation makes the sector particularly vulnerable to climate variability and change; hence these rural people are threatened by poverty. Botswana is prone to droughts, which have become more frequent over the last two decades, with devastating impacts on food security, health and environmental degradation. The Second National Communication to the United Nations Framework Convention on Climate Change for Botswana (Republic of Botswana, 2011) recognised the country's high levels of vulnerability to climate change, noting that this was due to the variable nature of the country's rainfall frequency and amount. In many rural areas, such as the Tswapong Region, rural women are poor and depend on agriculture and natural resources for their livelihoods.

### *National policies*

To encourage sustainable utilisation of natural resources, the government of Botswana has initiated the formation of CBOs through the CBNRM of 2007. The Policy encourages local communities to participate in natural resource management. Further, it gives 'communities incentives to engage in conservation activities leading to sustainable development and poverty reduction' (Republic of Botswana, 2007:2). Other policy documents linked to natural resource management and poverty reduction are the National Tourism Policy (Republic of Botswana, 1996), the Ecotourism Strategy (Republic of Botswana, 2002a) and the National Poverty Reduction Strategy (Republic of Botswana, 2003a). These national policies guide and facilitate the coordination of various poverty-related efforts by the various government sectors. They encompass cost-effective interventions and time-bound objectives and targets, which are gender- and health-sensitive, environmentally friendly and sustainable. The National Poverty Reduction Strategy is integrated into district and national development plans. Moreover, to promote literacy, the government has introduced a free Adult Literacy Programme. The majority of the beneficiaries of the Adult Literacy Programme are women in the rural areas.

Poverty continues to be one of the major challenges facing Botswana. 'According to Vision 2016, Botswana will have eradicated absolute poverty by the year 2016, so that no part of the country will have people living with incomes below the national poverty datum line' (Republic of Botswana, 2003b:63). The Botswana government had managed to reduce poverty from 47% of the population in 1993/1994 to about 30% by 2010. However, 22% of the remaining poor people experienced food shortages (Makgabenyana, 2010).

### *Response to resource-utilisation policies: The case of Kgetsi-ya-Tsie*

In response to national policies, a collective of women from 26 villages in the Tswapong Region formed a community-based trust known as *Kgetsi-ya-Tsie* in 1997 in order to sustainably manage natural resources within their area. Its purpose is to assist rural women to empower themselves, both socially and economically, by more effectively organising their entrepreneurial activities through the sustainable management of natural resources (KyT, 2009). *Kgetsi-ya-Tsie* works with over 1 200 women in the region to produce business

products (such as marula oil) from natural resources in their area. The Trust started with small, five-person resource user groups in nine villages, which grew to 26 villages federating their groups into 32 local village centres. Finally, these centres registered as a grassroots community trust in 1999 (KyT, 2009).

*Kgets-i-ya-Tsie* operates a microloan scheme, the default rate of which is very low owing largely to the strong social structure of the groups, which take collective responsibility for individual loans. The groups have set up a factory in the village of Lerala, the main activity of which is the production of marula oil and soap. These new skincare products have remarkable health and nutritional properties and are produced to very high quality standards. The Trust empowers its membership through training workshops and seminars. In addition, it operates grant and insurance schemes for its members.

### *Conceptual Framework*

This research explored concepts such as human capabilities, human agency, and community of practice, each of which is introduced below.

#### **Human capabilities**

As described by Sen (1999) and applied to the context of this research, the concept denotes sufficient, basic human capabilities such as education and good health to be able to escape from poverty. The research deployed Sen's capability approach. According to Walker (2005:103), the concept refers to 'what people are actually able to be and do, rather than to what resources they have access to. It focuses on developing people's capability to choose a life that they have reason to value.' In addition, the research explored 'opportunities to develop capabilities and the process of deciding collectively on valuable capabilities' (Walker, 2005:104) in educational contexts. It focused on lived capabilities at the level of everyday life in the context of natural resource management and climate change in Botswana. For Walker (2005), the capability approach provides analytical tools to examine what individuals are able to do, and why they value what they do, that is, it emphasises reflective and informed choices by individuals as well as the evaluation of people's agency and freedom in doing things they have reason to value. The research investigated *Kgets-i-ya-Tsie's* capabilities and freedom to achieve poverty reduction through natural resource management projects and entrepreneurial activities. In other words, do those concerned 'have the freedom to achieve these ..., to live one kind of life, rather than another, to have real opportunity to accomplish what we value' (Walker, 2005:104).

#### **Human agency**

The concept of human agency was explored alongside the human capability approach. As Walker (2005:106) puts it: Notions of agency are central to the capability approach. At the boundary of [functioning] and capabilities is the matter of choice, where a person exercises his or her agency, having the requisite set of capabilities, to make choices from a range of options and alternatives, if such a choice achieves his or her well-being. By human agency, Sen means 'someone who acts and brings about change, and whose achievements are to be judged in terms

of her own values and objectives, whether or not we assess them in terms of some external criteria as well' (1999:19). Agency is one's ability to pursue goals that one values. Agency and well-being are then deeply connected.

Walker (2005:108) continues by positing that 'human agency is [about] having the capacity to make informed and reflexive choices'. The present research explored ways in which quality education could play a role in developing and expanding capabilities, for instance with regard to entrepreneurial skills or/and in expanding the opportunities of women through their acquisition of basic skills, thereby making it possible to develop abilities and achieve success in a range of sustainable business possibilities. '[Human] agency is the individual capacity to act otherwise' (Barnes, 2001:249).

### Community of practice

This research project also explored the concept of community of practice (often abbreviated as 'CoP') among women in the rural area of Tswapong Hills in Botswana. The concept refers to the process of social learning that occurs and to shared sociocultural practices that emerge and evolve when people who have common goals interact as they strive towards those goals. The rural women who have formed the CBO, *Kgetsi-ya-Tsie*, in order to utilise natural resource products for both subsistence and commercial purposes, represent such a CoP. They informally acquired skills to identify, harvest or collect and process the natural products. The *Kgetsi-ya-Tsie* members are a community 'of practitioners into which newcomers ... enter and attempt to acquire the socio-cultural practices of the community' (Lave & Wenger, 1991:8). Lave and Wenger (1991) go on to explain that 'Community of Practice has become associated with knowledge management as people have begun to see it as a way of developing social capital, nurturing new knowledge, stimulating innovation, or sharing existing tacit knowledge within an organisation' (Lave & Wenger, 1991:8).

Lave and Wenger (1991) describe CoPs in terms of the interplay of four fundamental dualities: participation versus reification, designed versus emergent, identification versus negotiability, and local versus global – although, perhaps because of the possible link to knowledge management, the participation versus reification duality has been the focus of most interest. For Wenger, learning is central to human identity. A primary focus of Wenger's work is on learning as social participation, that is, on the individual as an active participant in the practices of social communities, and in the construction of his or her identity through these communities. From this understanding, the concept of the CoP develops: that is, of 'a group of individuals participating in communal activity, and experiencing/continuously creating their shared identity through engaging in and contributing to the practices of their communities' (Lave & Wenger, 1991). The benefits that CoPs claim as part of a knowledge management programme have led them to become the focus of much attention. Earlier approaches to knowledge management treated knowledge as an object (explicit knowledge). However, the CoP approach offers a way to theorise tacit knowledge which cannot easily be captured, codified and stored. The knowledge that is shared and learnt in a CoP amounts to social capital. People connect at various levels without the constraints of a formal structure. As people connect with one another, they are able to share their expertise and to learn from one another.

The benefits of this interaction include problem solving, developing new capabilities, leveraging best practices, standardising practices, and avoiding mistakes (Lave & Wenger, 1991).

### *Statement of the Problem, Rationale and Objectives*

#### **Rationale for the research**

Women in the research sample collect natural products, some of which they process and sell to the *Kgetsi-ya-Tsie* Trust. Those products that they cannot process themselves, they sell to the Trust unprocessed. The Trust processes and sells these natural products, together with those that it buys from members already processed. Some of these products are sold to local markets in Botswana, and others to international markets. This research investigated the benefits that members of *Kgetsi-ya-Tsie* derive from their membership, their coping strategies in the face of economic challenges and climate change, and the knowledge gained from the training provided by the Trust as well as the knowledge acquired from their peers through social learning.

#### **Research objectives**

The following objectives guided the research:

1. To examine capabilities, agency and CoP concepts among the membership of the *Kgetsi-ya-Tsie* Trust and their coping strategies in the face of poverty and climate change; and
2. To investigate the methods through which they acquire knowledge and skills with respect to the processing of natural resources and in respect of entrepreneurship.

### **Methodology**

#### *Research design*

This was a qualitative study following a broadly interpretative approach in order to explore issues of capability, agency, CoP and social learning. Methods of enquiry used included: a questionnaire, a research schedule, focus-group discussions, interviews, observation, and document analysis.

A semi-structured questionnaire was used to generate data among *Kgetsi-ya-Tsie* members on their capabilities, on their views on knowledge, quality education and different ways of knowing, and on the sustainability of natural resources that are the sources of their livelihood. The questionnaire was distributed to those who were literate, while those who were not literate were assisted by research assistants to answer the questions. A research interview schedule was used to generate data among *Kgetsi-ya-Tsie* leaders, such as the coordinator and the centre champions, that would otherwise not have been generated through a semi-structured questionnaire. The research interview data was used to triangulate data that had been generated through the questionnaires and focus-group discussions. The schedule, with a list of questions, allowed probing so as to gain a deeper understanding of the issues raised.

Focus-group discussions were another data-generating technique employed in this research. The purpose of using focus groups was to generate collective views on the uses of particular

natural resources and on the benefits derived from being members of *Kgetsi-ya-Tsie*. This technique assisted the researchers to triangulate data obtained through individual interviews, semi-structured questionnaires and observation (Cohen, Manion & Morrison, 2011). Focus-group discussions were organised and arranged at *Kgetsi-ya-Tsie* centres and villages for members. The discussions focused on the research questions.

Interviews were conducted with individual and group members and with the *Kgetsi-ya-Tsie* project coordinator. The focus of the interviews was to gain an understanding of the Trust profile, of the different natural resources collected and used, of the challenges, and of the benefits and skills acquired. The interview questions were open-ended to allow respondents to provide information that they had, and to allow probing. In addition, non-participant observations were made at the *Kgetsi-ya-Tsie* factory, during meetings, and in the field where raw materials are collected from the veld. The purpose of the observations was to confirm what was obtained from the interviews and document analysis, as well as to discover any other insights and experiences that might not have emerged through either the interviews or the document analysis.

According to Kumar (1999:105):

Observation is one way to collect primary data. Observation is a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place. ... It is also appropriate in situations where full and/or accurate information cannot be elicited by questioning, because respondents either are not co-operative or are unaware of the answers because it is difficult for them to detach themselves from the interaction. In summary, when you are more interested in the behaviour than in the perceptions of individuals, or when subjects are so involved in the interaction that they are unable to provide objective information about it, observation is the best approach to collect the required information.

The final data-generation technique was document analysis. The documents analysed included government policies, the *Kgetsi-ya-Tsie* constitution and promotional material, and project proposals. This was done to gain a thorough understanding of *Kgetsi-ya-Tsie*'s historical background and of how it is progressing in the context of rural women's role in the utilisation of natural resources to reduce poverty. Document analyses also assisted in the investigation of the sources (inventory) of raw materials, where they are found, and to where they are transported and sold.

### **Ethical issues**

Ethical issues were considered in this research in order to deal with the dilemma of striking a balance between the role of a researcher and the rights and values of the research participants or respondents. Gaining access to *Kgetsi-ya-Tsie* and its centres was negotiated with the relevant authorities. All ethical questions were properly addressed and considered before and during data generation and collection 'by seeking [the] subject's agreement to be interviewed and quoted, negotiating release of transcripts, etc.' (Gough, 2003:3). Prior to data collection, participants

were briefed on the purpose of the research and on their rights as participants in the research. This was done to ensure that there was informed consent, a free choice to take part, and to place some form of responsibility on the participants with regard to the answers they would be giving (Cohen, Manion & Morrison, 2000; Bell, 1999). As De Vos, Strydom, Fouche, Poggenpoel, Schurink and Schurink (1998:23) put it, 'the final responsibility for the ethical conduct rests squarely with the researcher concerned'.

The researchers avoided violation of privacy by acting with the necessary sensitivity where privacy of the subjects was relevant and by respecting anonymity and the confidentiality of the information provided on, or by, respondents. Particular attention was paid to this when probing 'sensitive and personal information from subjects' (De Vos *et al.*, 1998:25) in order to avoid exposing respondents to the possibility of emotional harm. In analysing data, care was taken to avoid betrayal or breach of trust. Letters of appreciation were written to all those who provided information by completing the questionnaire and to those who facilitated access to institutions.

Ethical issues were also considered in questionnaire administration. Participants were given an explanation of the purpose of the questionnaire. They were also given the opportunity to remain anonymous if so they wished. This was done to allow them to provide information freely and also to give informed consent. In the final analysis and writing up of this research, the respondents' names were removed from the text for ethical reasons. According to May (2001:60), 'informed consent' refers to:

... freely given agreement on the part of the researched to become a subject of the research process. However, this is not only based on a complete understanding of the aims and processes of the research itself, but also may assume to encompass any consequences that follow from its publication in the public domain. A researcher might, and in many cases ought to take all possible steps to protect the identity of any person in the anticipation of any information being used for purposes other than those intended.

The respondents were given due recognition in the acknowledgements section of the research report without mentioning their names and without linking them to the data they provided.

### **Research sites and respondents**

The research was conducted in 14 out of a total of 26 villages. The findings were based on data generated from 87 participants from 21 centres. *Kgetsi-ya-Tsie* had a total of 42 centres in 26 villages. It emerged that some of the village centres had collapsed, as some members were no longer active or were engaged in small-scale entrepreneurial activities. Their inactivity was attributed to a number of factors such as securing permanent jobs or migration to other areas such as towns in search of employment. Moreover, some were discouraged by the low prices offered by individual buyers locally and on external markets for the produce they were selling. Some former members preferred to sell independently and therefore left *Kgetsi-ya-Tsie*.



## Research Findings

### Changes in natural resource harvesting

The respondents agreed that natural resources were no longer as abundant as they used to be owing to climate change and variability. However, some claimed that the resources were still abundant, although they acknowledged that low rainfall and high temperatures affected yields of the natural products. Women blamed occasional droughts and low rainfall for the low yields. Other factors contributing to the threat to the abundance of the resources were: 'no more rain [as] in the past'; 'poor harvesting methods such as uprooting some herbal plants'; 'young women uproot some herbal plants such as *galalatshwene* [resurrection plant]'; and 'overharvesting of the resources by traditional doctors and herbalists'. They also blamed low yields of natural products on high demand by the market and stated: 'Not only *Kgets-i-ya-Tsie* members harvest the natural resources but even individuals are free to harvest and sell.' Women normally gather, collect or harvest natural resources in winter when plants are dry. In summer and autumn, they collect *phane* (caterpillars). *Monepenepe* (*Cassia abbreviata*) and Tswapong sand and clay are collected throughout the year, while marula (*Sclerocarya birrea subsp. Caffra*) is collected in the autumn.

### Benefits for *Kgets-i-ya-Tsie* members

In terms of benefits from their Trust, women have acquired some skills that assist them in adapting to harsh economic and climatic conditions. Through training, members of *Kgets-i-ya-Tsie* have acquired various skills, which include making jam from marula fruit and *lerotse* (cultivated melons). Members are also trained in how to manage the small businesses that they own, most of which have been set up with the money they earn from selling natural products and resources to *Kgets-i-ya-Tsie* and from the money they are given as grants and loans by *Kgets-i-ya-Tsie*. To generate an income, the produce made from marula fruit and melons is sold and consumed locally or is exported.

### Strategies for coping with the supply of natural resources

To improve their capabilities and agency, members of *Kgets-i-ya-Tsie* Trust have adopted several coping strategies to deal with the dwindling supply of natural resources, strategies which include the following:

1. Women use natural products that require very little rainfall, for example *galalatshwene* (*Myrothamnus flabellifolius*, known as the 'resurrection plant'), *monepenepe* (*Cassia abbreviata*) and *mosata* (a wild vegetable). The marula tree often withstands drought, but, during such times, it produces poor fruit which is often dry. Such fruit produces poor products when processed. The uses to which these products are put have been learnt in an informal setting and have been passed on from one generation to the next. To deal with the declining supply of these products, women have acquired knowledge of processing and preserving the products, for instance by sun-drying *monepenepe* (*Cassia abbreviata*, a herbal product) and wild vegetables. Through knowledge acquired from training workshops, *Kgets-i-ya-Tsie* products are now packaged for sale.

2. They grow and sell vegetables using a government scheme for poverty alleviation which encourages development of backyard gardens. They acquire vegetable-growing skills from workshops and by observing other members who started backyard-gardening earlier. The backyard gardens assist in providing food security and nutrition, thereby contributing to poverty reduction.
3. Women engage in recycling projects such as making plastic mats for sale. The recycling skills are acquired through workshops and social interaction.
4. Some members resort to ploughing their fields as a livelihood alternative, although they obtain low yields owing to poor rains. This helps *Kgetsi-ya-Tsie* members to cope with the impact of climate variability as well as to reduce poverty.
5. They operate tuck shops, selling a variety of products, including fat cakes. By engaging in different economic activities, they diversify their sources of livelihood, thereby reducing their impact on natural resources. Some have actually graduated from being destitute and have ceased to depend on gathering and collecting natural produce for sale, as it has proved to be more rewarding to operate tuck shops and utilise some entrepreneurial skills which are more sustainable.

Women's coping strategies have been acquired both informally through social learning and through non-formal training organised by *Kgetsi-ya-Tsie*.

### **Agency and social learning**

*Human agency* is emerging through social interaction to make *Kgetsi-ya-Tsie* structures more productive and empowering, thereby promoting adaptation and sustainability practices. *Kgetsi-ya-Tsie* members as a community of practitioners collectively act to sustain the supply of natural resources and, through formal and informal training, empower individuals to act independently to promote sustainability in the face of poverty and climate variability. Through the returns from sales of natural products and through appreciation of their indigenous knowledge and normalised new ideas, people develop capabilities 'to value their new doings and beings that make up the adaptation and/or sustainability practices' (Lotz-Sisitka 2009:87). *Kgetsi-ya-Tsie* members have, individually and collectively, developed the ability to define their own goals and act on them. Kabeer, as cited by Lotz-Sisitka (2009:87), states:

Agency is about more than observable action; it also encompasses the meanings, motivation and purpose which individuals bring to their activity, their sense of agency, or 'the power within'. While agency tends to be operationalised as 'decision-making' in the social science literature, it can take a number of other forms. It can take [the] form of bargaining and negotiation, deception and manipulation, subversion and resistance, as well as more intangible, cognitive processes of reflection and analysis. It can be exercised by individuals as well as by collectivities.

Through social interaction, communities of practitioners can exercise their power within their own context as a response to policy changes and the impact of poverty and climate variability.

They can resist some of the policy initiatives that are meant to encourage adaptation if, in terms of their understanding, their immediate needs are not addressed. *Kgetsí-ya-Tsie* members have accepted national policies aimed at assisting them to cope with harsh conditions such as poverty and climate change, as these policies have proved to be of direct benefit to them. Change-oriented practices or innovations should be promoted through social interaction such as that practised by *Kgetsí-ya-Tsie*. A systemic approach to innovation could facilitate a process of capability development and motivate people to participate in change-oriented practices in the context of poverty reduction and sustainable development.

It has emerged that there is a CoP (Lave & Wenger, 1991) among women in the *Kgetsí-ya-Tsie* project; they share views and dynamics of learning within the community. There are also common capabilities and agency amongst practitioners in order to reduce poverty and its challenges. The knowledge that is shared and learnt in the CoPs is their social capital. Women connect at various levels without the constraints of a formal structure so as to acquire skills that enable them to be more resilient to poverty challenges in the face of climate change. They share their expertise and experiences, and, from one another, they learn different ways of solving their problems, in the process developing new capabilities, leveraging best practices, standardising practices, and increasing their talents through social learning.

*Social learning* (Glasser, 2007) involves gaining knowledge and understanding through experiences/interactions. This is a typical process that occurs in rural African societies. Through less formal ways, communities interact and, in the process, share knowledge about farming, hunting, gathering and/or the uses of natural resources. Learning occurs because the community of practitioners meets regularly, both informally and formally. It is through these regular interactions that knowledge about natural resource use and conservation is gained and that new experiences are shared. Women who are members of *Kgetsí-ya-Tsie* utilise such informal interactions to enhance their understanding of natural resource use and economic diversification in the face of poverty and climate variability. The basis of policy change in order to promote poverty eradication and sustainability should be the knowledge generated through social interaction and the acquisition of knowledge from one another.

It emerged from the research that *Kgetsí-ya-Tsie* members felt that most of them had learnt about natural resources and their uses through socialisation. Some respondents said they had learnt about natural resources from their parents. However, a few of them said that they had learnt about these resources from the training provided by *Kgetsí-ya-Tsie*. Some respondents claimed that they had acquired the knowledge from other women (their peers). It is clear from the responses that women learnt about natural resources and their uses through social learning, either at home or through regular interaction as members of *Kgetsí-ya-Tsie*. Most of the members learnt about the commercial uses of the natural products from *Kgetsí-ya-Tsie*. They acquired new knowledge on recycling of products for sale through *Kgetsí-ya-Tsie*-organised meetings and training. They also learnt about new technologies through regular interactions. New knowledge acquired through social interaction assisted in adding value to the natural products and enabled members to reach distant markets for products.

Members of *Kgetsí-ya-Tsie* acquired various skills through social learning, which included making jam from marula fruit and *lerotse* (melons). Members are also trained on how to manage

the small businesses that they own, most of which are set up with the money they earn from selling natural products to *Kgetsí-ya-Tsie* and from the money they are given as grants by *Kgetsí-ya-Tsie* and donor agencies.

The *Kgetsí-ya-Tsie* women have become a CoP through their informal and formal interactions, as well as by sharing both indigenous knowledge (IK) and new knowledge on the use of natural resources. They learn in different ways through knowledge-sharing and intergenerational knowledge transfer processes. Contextual profiling of *Kgetsí-ya-Tsie* has indicated that the majority of a practitioner's knowledge about different natural products and their uses has been passed down through the generations. One practitioner noted: 'I was taught by my parents. My father was a traditional doctor and taught me [about] some medicinal plants and herbs. I now teach my children about these veld products.' The respondent was not a registered herbalist herself, but would prescribe herbs for those who informally consulted her. Interestingly, women learnt about the resources from their close interaction with their parents. In addition, some learnt about them informally from their peers.

*Kgetsí-ya-Tsie* admits young women who may have missed the opportunity to learn about the uses of the natural resources from their parents. These young practitioners acquire knowledge about natural resources and their uses in formal workshops. The resource persons are knowledgeable elderly women within the groups. However, in matters pertaining to uses of modern technology, business skills, policy and policy implementation, the resource persons come from outside the groups. Following the formal workshops, women teach one another at their respective centres. They meet at least once a month to share experiences and new ideas and to solve some problems.

### *Interpretation of the Findings*

*Kgetsí-ya-Tsie* is contributing to resilience-building among its members. The Trust aims to help rural Botswana women reduce poverty among themselves through the use of natural resources. Further, it encourages the development of entrepreneurial skills among members and assists them to start small-scale businesses. Through *Kgetsí-ya-Tsie's* training programmes and monetary donations, most of its members are benefiting from the sale of natural resources and from seed funding for their businesses. The Trust also encourages members to diversify their economic activities in the face of challenging economic and socio-ecological conditions. Women are encouraged to use forest products sustainably for commercial purposes, particularly during drought seasons. Through the use of government schemes and subsistence agriculture, *Kgetsí-ya-Tsie* encourages its members to process some of the crops for preservation, storage and/or sale. This enables women to reduce poverty and the adverse impacts of climate change and its variability. The Trust is also involved in health and vulnerability issues and in keeping the environment clean, and it encourages healthy eating through backyard-gardening. Members are also encouraged to use the produce to improve their diet and to sell surplus vegetables, jam and marula oil. One of the respondents stated: 'We are encouraged to make gardens in our homesteads so that we eat nutritious food.' In addition, members are encouraged to test for HIV/AIDS and to inform the public about diseases such as hypertension. These are positive initiatives that build resilience to socio-ecological challenges.

The research indicated that *Kgetsí-ya-Tsie* women are using social networks and family ties, particularly social-learning processes, to underpin traditional knowledge systems and so enhance practices that are resilient to climate change. This could be knowledge about edible wild vegetables, medicinal and herbal plants, and/or sustainable ways of collecting and gathering them. Traditional knowledge also includes predicting weather conditions, which informs household planning. These predictions may lead either to the use of seeds for early maturing crops or to storing and preserving the harvest so that it lasts longer. Livelihood strategies include dependence on wild food that survives in poor climatic conditions. Social networks and *Kgetsí-ya-Tsie* enhance the reduction in vulnerability, which, in turn, enhances adaptation capacity.

Women also use the barter system to acquire what they do not have in exchange for what they themselves do have (or produce). In addition, they use alternative schemes, such as backyard-gardening and poultry farming. These enable them to survive the harsh climatic conditions that are not suitable for traditional agricultural practices. Some are making profits and are saving as a result of non-agricultural activities such as the operation of tuck-shop businesses, or the sale of products made from recycled material. Others are also reducing their dependence on natural products, thereby not only becoming more resilient, but also promoting the sustainability of natural resources. Diversifying livelihoods in the face of ecological challenges assists in spreading the risks and reducing poverty-related impacts.

An analysis of data collected from among 87 women of the *Kgetsí-ya-Tsie* indicates that some women have adjusted their livelihood practices to cope with economic and socio-ecological challenges. Some of them alternate economic activities throughout the year as a strategy to avoid the adverse impact of poverty. In farming, they have resorted to drought-tolerant (resistant) local crops such as water melons and millet, avoiding the hybrid seeds that, though maturing within a shorter period with high yields, would completely fail when there is either excessive rain or no rain under the rain-fed system for arable land.

Through interaction with community groups and individuals, and from documents, it was established that *Kgetsí-ya-Tsie* is a community of practitioners reliant on the community-based, natural resource management policy to reduce poverty. This confirms Wenger's (1998) notion that CoPs are organised around what matters to the members of the community. It emerged from the research that what women shared were concerns about their economic status, about access to loans and about markets for their produce. This was also key to their identity, knowledge generation, learning interactions and hopes for a better future as members of a CoP. Through formal and informal interactions, *Kgetsí-ya-Tsie* members as a CoP share new knowledge and innovations which benefits them. The natural resources, which are regarded as communal resources, are the focus for regular interaction, particularly among women.

It also emerged that what the women considered relevant and to be quality education was training and information that would address their concerns about reducing poverty. By means of interaction, women feel empowered to make decisions and to improve their understanding of the use of resources and entrepreneurial skills. Some of the benefits of regular social interaction include the reappropriation of indigenous knowledge and traditional resilience practices. The practices are acquired through social-learning processes within CoPs and by

way of relevant training. The social-learning practices build capacity among local CoPs for the purpose of adaptation and resilience.

### **Challenges that may impede coping strategies**

Women have identified a number of challenges that impede the success of the *Kgetsi-ya-Tsie* in mitigating the impact of poverty and building resilience. The main challenge is that 'rain has become more unreliable and varied'. This affects those who are dependent on subsistence agriculture and forest resources. Prolonged and recurrent droughts affect some of the veld products that women usually gather, collect or harvest.

*Kgetsi-ya-Tsie* women compete for a limited market to sell natural resources and products. One of the women remarked that 'we do not have [a] market to sell jam. The jam has accumulated. Other customers buy on credit and take time to pay so we do not generate enough money to reduce poverty.' However, edible produce such as jam could be used at home, with the surplus being marketed. Members appreciated the skills acquired to make jam from the marula fruit and from cultivated melons, as this has also improved their diet at the household level. However, a lack of markets has led to some members failing to make a profit and repay the start-up loans from the Trust.

One of the major obstacles mentioned by all *Kgetsi-ya-Tsie* members interviewed was *lack of financial capital*. 'There is *not enough money* to start our own businesses or to sustain our projects in order to expand our businesses and to electrify our office.' Some are not able to repay loans. Other members are even finding that the new knowledge acquired is not benefiting them, as they cannot find markets for their products.

Another challenge is that of *governance* regarding the use of, and access to, forest products/resources. The resources that *Kgetsi-ya-Tsie* women use are common property. Legally, there is equal participation in accessing and using the natural resources of the forests to strengthen people's adaptation capacity, except for those intending to commercialise their harvesting or collection, who are usually required to obtain a trading licence. As a result of the communal use of the resources, some people, including those without skills, overharvest the products, thus threatening their sustainability as well as biodiversity.

### **Conclusions**

This research was aimed at exploring how gender-based natural resources are used to reduce poverty among rural women in the Tswapong area. The area is characterised by an abundance of seasonal natural resources and products. Women exploit these resources for subsistence and commercial purposes. The commercial aspects are coordinated and are implemented by a community trust known as *Kgetsi-ya-Tsie*. The Trust assists in processing and marketing the natural resource products. At national level, policies related to poverty reduction, such as the CBNRMP (Republic of Botswana, 2007) and the National Poverty Reduction Strategy (Republic of Botswana, 2002b), have been introduced to support CBOs, among other projects. Through the implementation of such policies and through informal, traditional knowledge systems, women are trained in the harvesting of natural resource products, and in their

processing and use. By way of training and skills acquisition, women's capabilities and agency are enhanced. It emerged from the research that women's empowerment needs multifaceted approaches by those affected and government institutions. Women in the eastern part of Botswana belonging to *Kgetsi-ya-Tsie* are complementing government's efforts in building adaptive strategies to protect themselves from poverty and to reduce its adverse impacts. The research has revealed that households dependent on agriculture are more vulnerable to poverty and climate change. In view of this, therefore, having other less climate-dependent sources of income can build resilience. It is evident that people having a range of sources of income spread the risks; hence these women are more protected and resilient to socio-ecological challenges. Individuals earning incomes from natural products are in a better position to save. Savings and credits by *Kgetsi-ya-Tsie* have not only promoted a money economy through commercial activities beyond subsistence agriculture, but have also provided members with start-up capital for new livelihood activities, thus protecting them from the adverse impacts of poverty. The study showed clearly that women are empowered by having their own sources of income and by having control over how it is used.

Through social learning, women are strengthening their capability to reduce the adverse impact of poverty. Participation in *Kgetsi-ya-Tsie* projects has proved to be an important strategy in sustainable development and a key to capacity-building, as it entails a component of knowledge transfer among group members. Also, social learning has proved to be the key to knowledge transfer, thereby increasing human agency and the intellectual and practical capacity to deal with poverty in the face of climate change.

As described above, this research explored capabilities, agency and CoPs in promoting social change designed to bring about poverty-reduction strategies among rural women. However, what did not emerge clearly from this ongoing research is how power is distributed among women in relation to poverty-coping strategies and organisational practices.

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